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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,657	12/28/2000	Petra Koschany	MSI	4076

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10/18/2002

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EXAMINER
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SCALTRITO, DONALD V

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/720,657

Applicant(s)

KOSCHANY, PETRA

Examiner

Donald V Scaltrito

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on papers filed on 28 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 & 15 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-9 & 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. With respect to Claim 6, it is unclear to the Examiner as to how the peripheral zone and the gas diffusion layer can be flush in one plane. With respect to Claim 7, it is unclear as to what is meant by "cathode gas conducts." With respect to Claim 8, the Claim is written in vague manner, making exact interpretation of the claim difficult. Proper correction is required.

Claim 9 recites the limitation "method in accordance with Claim 8 for a reaction between hydrogen and oxygen". However, Claim 8 fails to teach a reaction between hydrogen and oxygen. Therefore, there is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in-

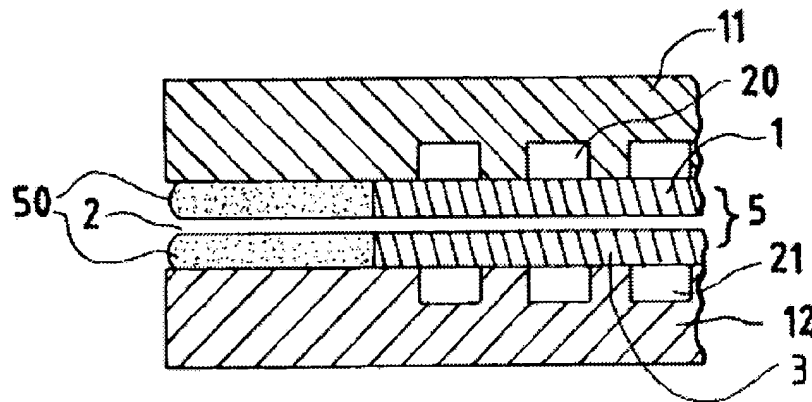
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1, 2, 4, 5, 6, 8, 11, 12 & 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Schmid et al. (U.S. Patent No. 6,080,503).

Schmid et al. disclose an electrochemical cell stack comprising a plurality of membrane electrode assemblies interposed between pairs of bipolar separator plates. The stack comprises adhesively bonded layers wherein each membrane electrode assembly is adhesively bonded to the adjacent pair of bipolar separator plates. The adhesive bond between the plate and membrane electrode assembly provides a substantially gas and liquid-tight seal around the perimeter of the electrochemically active area of the membrane electrode assembly and around any fluid manifold openings formed therein.

With respect to Claim 1, Schmid et al. specifically disclose a membrane electrode assembly that comprises a polymer electrolyte membrane(column 4, line 63 – column 4, line 17 of this reference; see also Figure 3a, shown below), grooves for gas distribution(column 7, lines 14-17), bipolar separator plates resting against the gas distribution grooves(column 4, lines 32-40; see also column 7, lines 14-17) wherein the outer periphery of the membrane electrode assembly is filled with an adhesive to form a liquid- and gas-tight seal(column 6, lines 55-58). The Examiner would like to point out that the gas distribution grooves are interpreted as gas diffusion layers and the area where the adhesive is applied to is interpreted as a circumferential volume zone.



With respect to Claim 4, Schmid et al. disclose using an epoxy resin as an adhesive (column 5, lines 35-46). With respect to Claim 5, Schmid et al. disclose impregnating a membrane electrode assembly with the adhesive and waiting for it to harden prior to assembly. The Examiner would like to point out that this step is interpreted as a pre-treatment. With respect to Claim 6, Schmid et al. show that the bipolar separator plate and gas distribution grooves achieve planarity with respect to one another.

With respect to Claim 8, Schmid et al. disclose a membrane electrode assembly that comprises a polymer electrolyte membrane (column 4, line 63 – column 4, line 17 of this reference; see also Figure 3a, shown below), grooves for gas distribution (column 7, lines 14-17), bipolar separator plates resting against the gas distribution grooves (column 4, lines 32-40; see also column 7, lines 14-17) wherein the outer periphery of the membrane electrode assembly is filled with an adhesive to form a liquid- and gas-tight seal (column 6, lines 55-58). With respect to Claim 11, Schmid et al. disclose using an epoxy resin as an adhesive (column 5, lines 35-46). With respect to Claim 12, Schmid et al. disclose impregnating a membrane electrode assembly with the adhesive and waiting

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for it to harden prior to assembly. The Examiner would like to point out that this step is interpreted as a pre-treatment. With respect to Claim 15, Schmid et al. disclose that the adhesively bonded fuel cell units are connected in series (column 5, lines 27-30).

This reference, therefore, anticipates Claims 1, 2, 4, 5, 6, 8, 11, 12 & 15 of the current application.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. (U.S. Patent No. 6,080,503).

Schmid et al. disclose all of the limitations as discussed above under the 35 U.S.C. 102(e) rejections. Schmid et al. fail to specifically teach, however, allowing the adhesive to penetrate into a gas diffusion layer by 0.2mm – 1.0mm.

The Examiner would like to point out that the disclosure of a penetration length of the adhesive into the gas diffusion layer of 0.2mm – 1.0mm is lacking criticality. Therefore, it would have been obvious to one of ordinary skill in the art to adjust the amount of adhesive to control the distribution of the adhesive into the gas diffusion layer to create a gas-tight seal.

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*Allowable Subject Matter*

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record makes no mention of using a vacuum clamping table for positioning the membrane electrode assembly on a separator plate.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Scaltrito, whose telephone number is 703.305.4926. The examiner can be reached in his office on Monday-Friday between the hours of 9am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, may be reached at 703.308.2383. The official fax number for the organization where this application or proceeding is assigned is 703.305.3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661

Donald Scaltrito  
Patent Examiner  
Art Unit 1745  
October 15, 2002

  
CAROL CHANEY  
PRIMARY EXAMINER